

Estimated Soil Carbon Sequestration Potential & Economic Benefit in Wyoming

The best available research data on soil carbon sequestration and acreages by land use were compiled to estimate that Wyoming lands could sequester 2.9 to 7.8 million tons of carbon per year with rangelands accounting for 72%, forestlands 5% and croplands 23% of this total. Carbon recently sold for \$3.14 per ton (\$0.85 per ton of CO₂). Therefore, we estimate that sales of Wyoming sequestered carbon could result in annual sales receipts of \$9,100,000 to \$22,000,000.

Example of Carbon Credit Trading

- Management change from conventional tillage to minimum-till on 1000 acres of corn.
- Research results indicate sequestering 0.5 ton of carbon per acre per year with minimum-till.
- Farmer would store 500 tons of carbon per year of additional carbon.
- This additional carbon storage is considered a commodity and could be offered for sale through numerous carbon credit trading brokers.

Future Activities

- Initiate demonstration projects on rangeland (Lusk) and forestlands (Newcastle) in 2004.
- Initiate demonstration project on croplands (site to be determined, 2005).
- Conduct outreach workshop for Wyoming citizens, June 22-23, 2004, in Casper.
- Facilitate the marketing of carbon credits from Wyoming lands
- Work with the carbon marketing groups to conduct a carbon sequestration and carbon credit trading workshop.

Information provided by the Wyoming Carbon Sequestration Advisory Committee

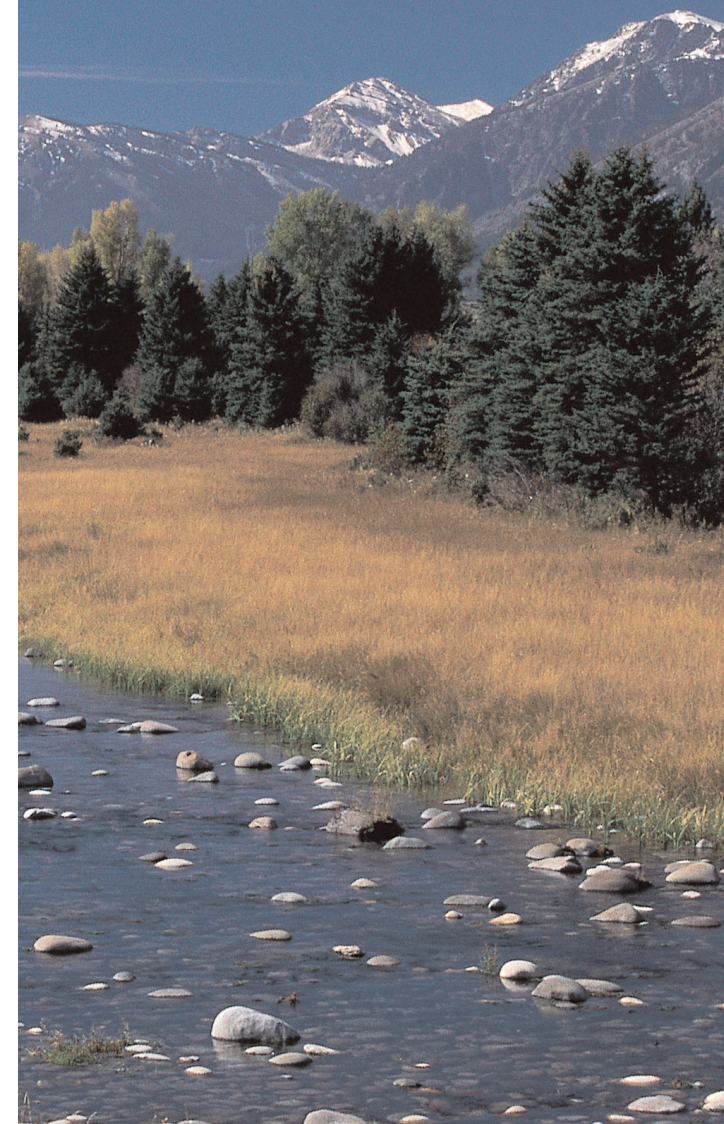
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Wyoming

Carbon

Sequestration

Program



What is Carbon Sequestration

Long-term storage of carbon in terrestrial or geologic sinks.

- terrestrial sinks: soil organic matter and aboveground plant material
- geologic sinks: underground storage of CO₂ in depleted oil and gas reservoirs

Why is it needed?

Levels of CO₂ in the atmosphere:

- have dramatically increased from 280 parts per million (ppm) in the mid- 1800's (pre-industrial) to current levels of 372 ppm.

Why? Largely because of human activities including the burning of fossil fuels and the cultivation of cropland.

- are predicted to increase to 550 ppm by 2100.

Implications? Changes in global climate are likely.

The President's Clear Skies Initiative establishes a goal of 18% reduction of greenhouse emission intensities by 2012. This Initiative coupled with the nation's emerging energy policy will have a significant impact on future CO₂ emission levels and the price of carbon credits.

Legislative Action

The Wyoming Carbon Storage Law was enacted in 2001 with a sunset date of July 1, 2009.

Goals

1. To develop, quantify, and implement land management practices to increase levels of stored carbon in Wyoming agricultural and forestlands which can provide environmental and economic benefits to Wyoming citizens.
2. Promote participation of Wyoming agricultural producers in the emerging carbon credit trading programs.
3. Provide scientifically-sound, research demonstration projects on rangelands, forestlands and croplands with cooperating private and public land managers.

Role of Agriculture

Plants naturally remove CO₂ from the atmosphere through photosynthesis (growth process).

Management practices that increase production of aboveground plant material, increase carbon storage in soil organic matter and/or minimize cultivation of croplands will reduce CO₂ emission into the atmosphere.

- proper grazing management
- management for healthy and sustainable forests
- minimum and no-till

Carbon that is stored through these land management practices can potentially be marketed by landowners through carbon credit trading programs. Energy companies may purchase these carbon credits to offset emissions in a voluntary manner rather than through regulatory requirements. The financial opportunities of selling carbon credits will assist local economies.

